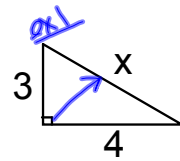
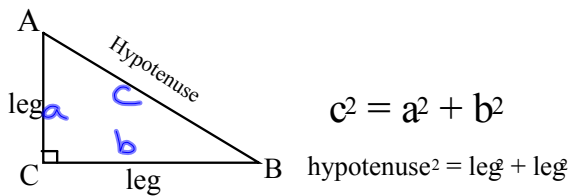


4.4 The Pythagorean Theorem and (The Distance Formula)



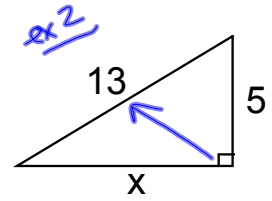
$$c^2 = a^2 + b^2$$

$$x^2 = 3^2 + 4^2$$

$$x^2 = 9 + 16$$

$$\sqrt{x^2} = \sqrt{25}$$

$$x = 5$$



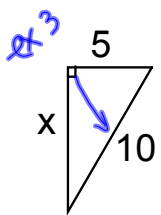
$$13^2 = x^2 + 5^2$$

$$169 = x^2 + 25$$

$$\begin{array}{r} 169 \\ -25 \\ \hline 144 \end{array} = x^2 - 25$$

$$\sqrt{144} = \sqrt{x^2}$$

$$12 = x$$



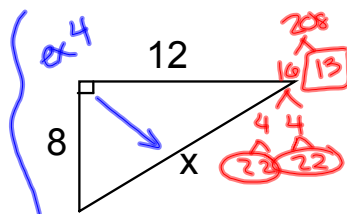
$$10^2 = x^2 + 5^2$$

$$100 = x^2 + 25$$

$$\begin{array}{r} 100 \\ -25 \\ \hline 75 \end{array} = x^2 - 25$$

$$\sqrt{75} = \sqrt{x^2}$$

$$5\sqrt{3} = x$$

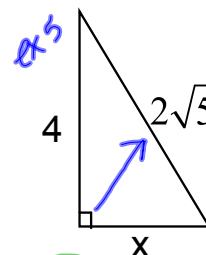


$$x^2 = 8^2 + 12^2$$

$$x^2 = 64 + 144$$

$$x^2 = 208$$

$$x = 4\sqrt{13}$$



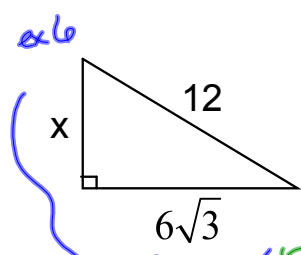
$$(2\sqrt{5})^2 = x^2 + 4^2$$

$$4 \cdot 5 = x^2 + 16$$

$$20 = x^2 + 16$$

$$\sqrt{4} = \sqrt{x^2}$$

$$2 = x$$



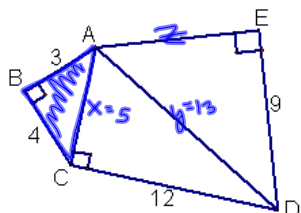
$$12^2 = x^2 + (6\sqrt{3})^2$$

$$144 = x^2 + 36 \cdot 3$$

$$\begin{array}{r} 144 \\ -108 \\ \hline 36 \end{array} = x^2 - 108$$

$$\sqrt{36} = \sqrt{x^2}$$

$$6 = x$$



Find AE.

$$\begin{array}{r} 88 \\ \times 8 \\ \hline 704 \\ + 704 \\ \hline 224 \end{array}$$

Which triangle has 2 sides given?

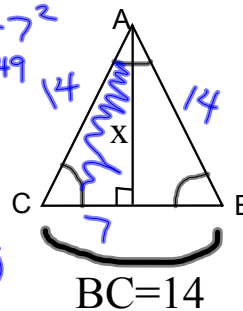
$$\begin{array}{l} x^2 = 3^2 + 4^2 \\ \sqrt{x^2} = \sqrt{25} \\ x = 5 \end{array}$$

$$\begin{array}{l} y^2 = 5^2 + 12^2 \\ \sqrt{y^2} = \sqrt{169} \\ y = 13 \end{array}$$

$$\begin{array}{l} 13^2 = z^2 + 9^2 \\ 169 = z^2 + 81 \\ \sqrt{88} = z^2 \\ 2\sqrt{22} = z \end{array}$$

What type of triangle is ABC?

$$\begin{array}{l} 14^2 = x^2 + 7^2 \\ 196 = x^2 + 49 \\ \sqrt{147} = \sqrt{x^2} \\ 7\sqrt{3} = x \end{array}$$



HW

p195-197

8, 14, 16-18, 35, 36

Attachments

Pythagoras.gsp